

Title Response of the onion pests *Thrips tabaci* (Lind.) (Insecta: Thysanoptera: Thripidae) and *Aspergillus niger* (van Tieghem) (Fungi: Hyphomycetes) to controlled atmospheres

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Abstract

The effects on onion thrips (*Thrips tabaci*) of controlled atmospheres (CAs) containing 15, 30, 45 and 60% carbon dioxide in air were determined by measuring the metabolic heat rates (MHRs) using microcalorimetry and compared with previous conventional trials. Black mould (*Aspergillus niger*), cultured in several different ways, was exposed to the same CAs with the effects being determined by microcalorimetry and colony-growth measurements. The effect of temperature on the MHR of black mould was measured from 5 to 45 °C. These results show CAs high in carbon dioxide are a promising treatment for the postharvest control of thrips but are ineffective for the control of black mould at ambient temperatures. Temperatures above 35 °C, in combination with CAs, may be an effective treatment for black mould if onions are not damaged by these conditions.